PATENT
TS1455 (US)
CML:EL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

In re application of	)	
	)	
JOHANNES GERARDUS MARIA SCHILDER	)	Confirmation No.: 4365
	)	
Serial No. 10/580,643	)	Group Art Unit: 1723
	)	
Filed February 6, 2007	)	Examiner: Matthew J. Merkling
	)	
SPRAY RING AND REACTOR VESSEL PROVIDED WITH SUCH A SPRAY RING AND A METHOD OF WETTING CHAR AND/OR SLAG IN A WATER BATH	)	April 14, 2011

COMMISSIONER FOR PATENTS
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF

Applicant hereby submits this Appeal Brief in order to appeal the final rejection of claims 1-12 and 16-19 in the Final Office Action mailed November 18, 2010.

Please charge any fees that are necessary in connection with the filing of this brief to Shell Oil Company, Deposit Account No. 19-1800.

Real Party in Interest

The real party in interest is Shell Oil Company.

Related Appeals and Interferences

To the best of the undersigned's knowledge, there are no related appeals or interferences.

Status of the Claims

Claims 1-12 and 16-19 are pending in the application and were finally rejected in the office action mailed November 18, 2010. Claims 1-12 and 16-19 are on appeal.

Status of Amendments

No amendments to the claims have been filed since the Final Rejection.

Summary of Claimed Subject Matter

The invention as set forth in claim 1 is directed to a spray ring, for wetting char and/or slag in a water bath with a wetting fluid. See page 7, lines 13-35 of the specification. The spray ring comprises a loop conduit arranged in a loop-line, which loop conduit is at an inlet point provided with an inlet for feeding the wetting fluid into the loop conduit in an inlet flow direction. See page 8, lines 8-31. The spray ring also includes a plurality of outlet openings for spraying the wetting fluid out of the loop conduit. See page 9, lines 19-28. The inlet flow direction has a component that is tangential to a loop-line flow direction of the wetting fluid through the loop conduit at the inlet point. See page 8, lines 11-19.

The invention as set forth in claim 9 is directed to a reactor vessel comprising a reaction area and, disposed gravitationally lower than the reaction area, a slag water bath for holding water and receiving char and/or slag from the reaction area. See page 6, line 17 – page 7, line 12 of the specification. The vessel includes a spray ring comprising a loop conduit arranged in a loop-line, which loop conduit is at an inlet point provided with an inlet for feeding a wetting fluid into the loop conduit in an inlet flow direction. See page 8, lines 8-31. The spray ring also includes a plurality of outlet openings for spraying the wetting fluid out of the loop conduit. See page 9, lines 19-28. The inlet flow direction has a component that is tangential to a loop-line flow direction of the wetting fluid through the loop conduit at the inlet point. See

page 8, lines 11-19. The spray ring is arranged above the water surface of the water in the slag water bath. See page 7, lines 13-25.

Grounds of Rejection to be Reviewed on Appeal

Claims 1, 2 and 6-9 were rejected under 35 U.S.C. 102(b) as being anticipated by Anderson (US 4,046,541).

Claims 1, 2, 4, 5, 9-12 and 16-19 were rejected under 35 U.S.C. 102(b) as being anticipated by Segerstrom (EP 0318071 A1).

Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over Segerstrom (EP 0318071 A1) in view of Ellis (US 4,000,753).

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Segerstrom (EP 0318071 A1).

Argument

Rejection of claims 1, 2 and 6-9 under 35 U.S.C. 102(b) as being anticipated by Anderson (US 4,046,541)

The present invention is directed to a spray ring and a reactor vessel including such a ring wherein the spray ring comprises a loop conduit which has one or more inlets and a plurality of outlet openings for spraying a wetting fluid onto char and/or slag in a water bath. The inlet flow direction has a component which is tangential to the loop line flow direction of the loop conduit. As set forth in the paragraph beginning on line 31 of page 2 of the specification, by arranging the inlet flow direction to have a component that is tangential to the circulation flow direction in the spray ring, circulation of wetting fluid through the spray ring is induced or enhanced. Settlement of solid particles that may be entrained in the wetting fluid is prevented or reduced by inducing or enhancing circulation in the spray ring.

The Anderson reference is directed to a slag quenching method for pyrolysis furnaces. As set forth in column 6, lines 21-37 of Anderson, Fig. 3 shows a plan view of one embodiment of the spray ring. Water flowing through conduit 125 enters slag duct 106 via tangentially arranged water nozzles 125*a* through 125*h*. These water injectors form a thin film of water along the inner wall of the duct. Accordingly, nozzles 125*a* through 125*h* would correspond to the outlets of the spray ring in the present invention, not the inlet. In Fig. 3, it appears that these

nozzles are positioned directly within duct 106. While Anderson does suggest that a spray ring can be used, the illustrated nozzles correspond to the outlets of the spray ring and are slanted so as to provide a film of water along the inner wall of the duct. There is no teaching or suggestion in the Anderson reference of having an inlet to a spray ring being formed at a tangential angle to prevent accumulation of sediment within a spray ring.

Rejection of claims 1, 2, 4, 5, 9-12 and 16-19 under 35 U.S.C. 102(b) as being anticipated by Segerstrom (EP 0318071 A1)

The Segerstrom reference is discussed in the background portion of the specification beginning at line 1 on page 2. The spray ring described in Segerstrom suffers from settlement of solid particles from the recycled water. The supply duct for the spray ring extends perpendicularly from the circular conduit. It does not have a tangential component as required by independent claims 1 and 9 of the present invention. The tangential component of the inlet line is discussed in the current application on page 8, lines 8-19. It is illustrated in Fig. 2 of the drawings and is related to the illustrated angle alpha.

Rejection of claim 3 under 35 U.S.C. 103(a) as being unpatentable over Segerstrom (EP 0318071 A1) in view of Ellis (US 4,000,753).

Inasmuch as claim 3 depends from claim 1, applicant submits that it would not have been obvious for the reasons discussed above. The Ellis reference does not overcome the shortcomings of Segerstrom.

Rejection of claim 6 under 35 U.S.C. 103(a) as being unpatentable over Segerstrom (EP 0318071 A1)

Inasmuch as claim 6 depends from claim 1, applicant submits that it would not have been obvious for the reasons discussed above.

Conclusion

Based on the foregoing arguments, Applicant asserts that the claims of the present application are not anticipated and would not have been obvious in view of the cited references. It

is respectfully requested that this Appeal be upheld and that the application be sent back to the Examiner for allowance.

Respectfully submitted,

JOHANNES GERARDUS MARIA SCHILDER

By /Craig M. Lundell/_____

P.O. Box 2463
Houston, Texas 77252-2463

Craig M. Lundell
Attorney
Reg. No. 30,284
(713) 241-2475 telephone
(713) 241-6617 facsimile

CLAIMS APPENDIX

1. A spray ring, for wetting char and/or slag in a water bath with a wetting fluid, the spray ring comprising a loop conduit arranged in a loop-line, which loop conduit is at an inlet point provided with an inlet for feeding the wetting fluid into the loop conduit in an inlet flow direction, and with a plurality of outlet openings for spraying the wetting fluid out of the loop conduit, wherein the inlet flow direction has a component that is tangential to a loop-line flow direction of the wetting fluid through the loop conduit at the inlet point.

2. The spray ring of claim 1, wherein the loop conduit forms a peripheral ambit around an encompassed area and whereby the outlet openings are directed such that the outlet flow direction of the wetting fluid has a component directed inwardly towards the encompassed area.

3. The spray ring of claim 1, wherein one or more of the outlet openings are provided with a connecting flange for holding flange-connectable nozzles.

4. The spray ring of claim 1, wherein the conduit forming the loop conduit has an internal cross sectional contour in a plane perpendicular to the loop-line flow direction that is free from a convex section.

5. The spray ring of claim 1, wherein the loop conduit extends in a two-dimensional plane and the inlet point is provided in the outer peripheral wall of the loop conduit.

6. The spray ring of claim 1, wherein a plurality of inlets are provided in a plurality of inlet points, whereby the inlet flow direction in each of the inlet points has a component that is tangential to the loop-line flow direction in each inlet point.

7. The spray ring of claim 6, wherein the plurality of inlet points are equally distributed along the loop conduit.

8. The spray ring of claim 1, wherein the included angle between the inlet flow direction and the loop-line flow in each inlet point is less than 80º.

9. A reactor vessel comprising a reaction area and, disposed gravitationally lower than the reaction area, a slag water bath for holding water and receiving char and/or slag from the reaction area, and a spray ring comprising a loop conduit arranged in a loop-line, which loop conduit is at an inlet point provided with an inlet for feeding a wetting fluid into the loop conduit in an inlet flow direction, and with a plurality of outlet openings for spraying the wetting fluid out of the loop conduit, wherein the inlet flow direction has a component that is tangential to a loop-line flow direction of the wetting fluid through the loop conduit at the inlet point, said spray ring being arranged above the water surface of the water in the slag water bath.

10. The reactor vessel of claim 9, which reactor vessel is provided with an inlet port for connecting to a wetting fluid supply, whereby the inlet port is located gravitationally higher than the spray ring, and wherein the inlet opening of the spray ring is connected to the inlet port via an internal supply conduit.

11. The reactor vessel of claim 10, wherein the internal supply conduit extends exclusively non-horizontally.

12. The reactor vessel of claim 10, wherein the internal supply conduit is connected to the inlet port via a distribution box, which distribution box is provided with an access port in a wall part opposite the internal supply conduit and essentially in line with the internal supply conduit.

Claims 13-15 (Canceled).

16. The spray ring of claim 2, wherein the conduit forming the loop conduit has an internal cross sectional contour in a plane perpendicular to the loop-line flow direction that is free from a convex section.

17. The reactor vessel of claim 9, wherein the loop conduit forms a peripheral ambit around an encompassed area and whereby the outlet openings are directed such that the outlet flow direction of the wetting fluid has a component directed inwardly towards the encompassed area.

18. The reactor vessel of claim 9, wherein the plurality of outlet openings are directed directly to the water surface.

19. The reactor vessel of claim 9, wherein the conduit forming the loop conduit has an internal cross sectional contour in a plane perpendicular to the loop-line flow direction that is free from a convex section.

Claim 20 (Canceled).

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None